

REMARKS

This Amendment is in response to the Office Action dated July 30, 2003. Claims 1-22 are pending in the application and were rejected. Applicants respond to the rejection of claims 1-22 as follows.

Response to the rejection of the drawings

The drawings were objected to under 37 CFR 1.83(a) on the basis that the second interface must be shown or the feature(s) canceled from the claims. As described in Applicants' specification, FIGS. 3-1 through 3-4 illustrate a fixture 110 which includes a test board 170 including a plurality of test terminals to form a first interface 116 and terminals 122 on a second interface 120 formed by a tip portion of pins or probes. (Applicants' Specification, Page 6, lines 11-17). Based upon the foregoing, recitation of a second interface is fully supported by Applicants' figures and specification. Furthermore, Applicants have amended the paragraph beginning on page 3, line 22 and ending on page 4, line 4 to recite a first interface surface or first interface 116 and a second interface surface or second interface 120 which is supported by Applicants' specification and claims as originally filed. Reconsideration and withdrawal of the objection to the drawings are respectfully requested.

Response to claim rejections - 35 U.S.C. 112

Claims 1-19 were rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement and the written description requirement on the basis that the second interface of the fixture is not enabled from the disclosure and is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed had possession of the claimed invention. As previously discussed, Applicants' specification describes a fixture including a second interface 120 including terminals 122 as illustrated in figures 3-1 through 3-4. (See Applicants' specification page 6, lines 11-17). Accordingly,

Applicants respectfully request withdrawal of the rejection of claims 1-19 under 35 U.S.C. § 112.

Claim 7 was rejected on the basis that the recited subject matter that the first interface is orientated in a first direction and the second interface is orientated in a second opposed direction is not disclosed in the specification and on the basis that "orientation of first and second interfaces as claimed in [sic] indefinite because clamp member is/are orienting on the fixture and not the interface itself." Applicants' specification (including the claims as originally filed) discloses an embodiment of a test assembly including first and second interfaces 116, 120 (or first interface and second interface surfaces) orientated in opposed directions. (See Applicants' specification, page 3, lines 24-25). Based upon the foregoing reconsideration and withdrawal of the rejection of claim 7 are respectfully requested.

Claims 20-22 were rejected under 35 U.S.C. § 112, first paragraph because the specification does not reasonably provide enablement for a "test device comprises [sic] a test circuit wherein test circuit includes a fixture" and the claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s) at the time the application was filed had possession of the claimed invention. Claims 20-23 as amended recite a test assembly comprising a test circuit which is disclosed in Applicants' specification as originally filed. See Applicants' Specification, page 6, lines 6-10. Furthermore Applicants have amended page 6, line 10 of the specification to recite "and assembly" after test circuitry of the test engine 104 which is supported by the specification and claims as originally filed.

Claims 1-22 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite on the basis that the second interface as recited in claims 1-19 is not clear because the "disclosure lacks[sic] the description and hence second interface of the fixture is not enabling". As previously discussed,

Applicants' specification fully supports the limitation of a second interface. Claims 20-22 were rejected on the basis that the fixture is not a part of the test device 104. Claims 20-22 have been amended to recite a test assembly and Applicants respectfully request reconsideration and withdrawal of the rejection of claims 20-22 under 35 U.S.C. § 112 as previously discussed.

Response to claim rejections - 35 U.S.C. § 102

Claims 11-18, 20-22, 1, 3, 6 and 8-10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Rabkin, U.S. Patent No. 5,828,223. Claims 11-13 recite *inter alia* a test assembly including a fixture including a first interface and a second interface and a plurality of interface terminals on the first interface being electrically connected to a plurality of interface terminals on the second interface and a means for removably installing the fixture to a test engine to provide an electrical connection between the interface terminals on the first interface and the test engine and printed circuit board under test.

Means-plus-function limitations in the claims are interpreted to include the corresponding structure disclosed in the specification and equivalents. See *In re Donaldson Co.*, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994). Claims 11-13 were rejected on the basis that Rabkin discloses a fixture including a first interface having a plurality of interface terminals and a second interface having a plurality of interface terminals and a means for removably installing the fixture to the test engine without reference to the corresponding structure disclosed in Applicants' specification and accordingly, the Office Action fails to establish a *prima facie* basis for rejecting the claims. Based upon the foregoing reconsideration and withdrawal of the rejection of claims 11-13 are respectfully requested. Claim 12 further recites opposed clamp members which as claimed is not taught nor suggested by top and bottom of 71 of Rabkin.

Claims 14-18 relate to a method for testing a circuit board which as amended recite *inter alia* the steps of clamping a fixture to an actuator assembly, operating the actuator assembly to move a fixture so that the terminals of the first interface of the fixture electrically interface with terminals on a test device and operating an actuator to selectively bias at least one circuit board relative to a plurality of terminals of a second interface of the fixture which is not taught nor suggested by the Rabkin.

As described in Applicants' specification, an electrical interface between test equipment and a circuit board through a test fixture including first and second interfaces or interfacing surfaces is provided. The test fixture is installed relative to test equipment via the steps of clamping the fixture and operating an actuator assembly to move the fixture so that the terminal of the first interface electrically interface with the test engine and operating an actuator to bias a circuit board under test against terminals of the second interface of the fixture as claimed. Rabkin discloses a universal chip tester and does not teach or suggest the subject matter now claimed. Furthermore as discussed herein, Rabkin does not teach or suggest rotation as recited in claim 16. Thus Applicants respectfully request reconsideration and withdrawal of the rejection of claims 14-18.

Claims 20-22 were rejected on the basis of Rabkin discloses a test device 62 of figures 1-2 comprising a test circuit (30, 40, 61, 35, 65, 21 and 22) adapted to electrically test a particular circuit board (ICs of 28 on 25) and means for operably engaging the test circuit against the circuit board. Claim 20 was rejected without consideration of the corresponding structure disclosed in Applicants' specification. Accordingly, the Office Action fails to establish a *prima facie* basis to reject claims 20-22. Applicants respectfully request reconsideration and allowance of amended claims 20-22 based upon

the corresponding structure disclosed in Applicants' specification and equivalents.

Claims 1, 3, 6 and 8-10 have been amended to recite *inter alia* an actuator operably coupled to the fixture to install the fixture relative to a test device and an actuator to bias a printed circuit board relative to terminals on a second interface of the fixture to provide an electrical interface to the test engine. As previously discussed, Rabkin discloses a chip tester including a fixed housing plate and movable socket plate (and boards) and does not teach or suggest the subject matter of amended claim 1 including an actuator to bias a printed circuit board under test relative to terminals on a fixture and an actuator to install a fixture relative to a test engine or device as now claimed. Furthermore top and bottom of 71 of Rabkin does not teach nor suggest the subject matter of claim 3.

Response to claim rejections - 35 U.S.C. § 103

Claim 2 was rejected under 35 U.S.C. § 103 as being unpatentable over Rabkin as applied to claim 1 above and further in view of Official Notice. Claim 2 is dependent on amended claim 1 and accordingly, is allowable as previously discussed over Rabkin. Furthermore, claim 2 recites a rotator which was rejected on the basis that it "would have been obvious matter of design choice to use rotator to rotate the clamp assembly between first and second orientation [sic], in order to load and clamp the test fixture during testing [b]ecause the same invention can also be performed with hand". Rabkin does not disclose rotation of a clamp assembly and thus it would not have been obvious to provide a rotator since Rabkin does not teach or suggest rotation between first and second orientations and thus the Office Action fails to establish a *prima facie* basis to reject the claims.

Claim 4 was rejected as being unpatentable over Rabkin as applied to claims 3 and 1 above and further in view of Official Notice on the basis that it "would have been obvious to one having ordinary skill in the art to modify Rabkin's clamp opening of 30 as elongated clamp opening in the fixture and head

71 of 70 as an elongated head so rotation orientation of head will clamp the fixture using actuator 70 with the test fixture, in order to make clamping [sic] operation automatic after loading the fixture". Rabkin does not teach or suggest rotation of the head 71 and thus there is no basis to modify Rabkin as set forth in the Office Action.

Claims 5 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rabkin as applied to claims 1 and 14 and further in view of Wexler. Claims 5 and 19 are dependent upon claims 1 and 14, respectively which as previously discussed are allowable over Rabkin and Wexler. Further Rabkin relates to a chip tester and there is no basis to modify Rabkin in view of the circuit board tester of Wexler as set forth in the Office Action. Thus, reconsideration and allowance of claims 5 and 19 are respectfully requested.

Claim 22 is rejected as being unpatentable over Rabkin as applied to claims 20-21 and further in view of Wexler, on the basis that it "would have been obvious to one having ordinary skill in the art to modify the test device of Rabkin with both sides of the circuit board 12 are electrically engageable as taught by Wexler in order to test the circuit board terminals from both side [sic]". Claim 22 is dependent upon amended claim 20 which is allowable over the cited references. Furthermore, there is no basis to modify the chip tester of Rabkin as suggested in view of the circuit board tester of Wexler. Based upon the foregoing, reconsideration and allowance are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: Deirdre Kvale

Deirdre Megley Kvale, Reg. No. 35,612
Suite 1600 - International Centre
900 Second Avenue South
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312

DMK:tas

RECEIVED
CENTRAL FAX CENTER
OCT 01 2003

OFFICIAL